

REQUEST FOR RECONSIDERATION

Claims 1-3, 5-10 and 12-20 remain active in this application.

The claimed invention is directed to a hair cleansing composition.

Hair cleansing, such as shampooing, tend to damage the appearance of hair.

Protecting bases added to shampoo compositions can sometimes be difficult to formulate such that the protecting base can be ineffectively delivered to the hair. Accordingly, hair cleansing compositions which are effective at delivering a protecting base to hair are sought.

The claimed invention addresses the problem by providing a hair cleansing composition comprising an amphipathic amide lipid, an anionic surfactant and an acid of lactic acid, malic acid or a **salt thereof** where the composition has a pH of from 1 to 4.5 at 25°C when diluted with water to 20 times the weight of said composition. Applicants have discovered that lactic acid and malic acid are particularly effective for delivery of an amphipathic amide lipid to **provide hair penetration and/or repair damaged hair**. Such a hair cleansing composition is nowhere disclosed or suggested in the cited prior art of record.

*Applicants Observe Improved Hair Treatment Performance Using Specific Acids And Salts Thereof Within the Claimed pH Range*

Applicants observe an improvement in hair treatment when using lactic acid, malic acid or a salt thereof and the pH is within the claimed range of 1-4.5

Applicants have conducted additional experiments in order to demonstrate an enhanced hair conditioning effect from using a lactic acid salt and a malic acid salt, as well as for a mixture of cationic polymers as recited in claim 5. The data, along with previously submitted evidence is reproduced below:

Table 1

(wt. %)

		Examples										Comparative Examples				
		1	2	3	4	5	6	7	8	9	10	1	2	3	4'	5
(A)	Amphipathic amide lipid A															
	Amphipathic amide lipid B															
(B)	Sodium polyoxyethylene (2) lauryl ether sulfate	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
	Sodium lauryl sulfate	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
(C)	Lactic acid	1	-	1	-	-	1	1	1	1	1	1	1	-	-	-
	Sodium lactate	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-
	Malic acid	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-
	Sodium malate	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1
	Citric acid	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-
Others	Myristyl alcohol	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	Cocoylmonoethanolamide	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
	Ethylene glycol distearate	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	Cationized hydroxyethyl cellulose	0.3	0.3	0.3	0.3	0.3	-	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
	Cationized guar gum	0.5	0.5	0.5	0.5	0.5	0.5	-	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
	pH regulator (sodium hydroxide, citric acid)	q.s.*	q.s.*	q.s.*	q.s.*	q.s.*	q.s.*	q.s.*	q.s.*	q.s.*	q.s.*	q.s.*	q.s.*	q.s.*	q.s.*	q.s.*
	Purified water	bal	bal	bal	bal	bal	bal	bal	bal	bal	bal	bal	bal	bal	bal	bal
pH		3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	5.0	3.5	6.0	3.5	5.0
Evaluation	Smoothness of hair	A	A	A	B	B	A	A	A	A	A	C	C	C	C	C
	Moist feeling of hair	A	A	A	B	B	A	A	A	A	A	C	C	C	C	C
	Physical property-recovering ratio of hair	A	A	B	A	A	A	A	A	A	A	C	C	C	C	C

\* An amount to adjust the pH

During the discussion the examiner Venkat of September 14, 2010, the examiner requested applicants evidence in support of the claim limitation of “a salt thereof” as applied to lactic acid and malic acid component (C). In addition the examiner noted that applicants’ demonstration as to a cationic polymer was of the mixture of cationized hydroxyethyl cellulose and cationized guar gum, but not used separately. The additional evidence submitted provides performance evaluation as to smoothness of hair, moist feeling of hair and physical property-recovery ratio of hair for compositions containing sodium lactate (example 4), sodium malate (example 5), cationized hydroxyethyl cellulose alone as cationic polymer (example 7) and cationized guar gum alone as cationic polymer (example 6). In each of the new examples, the hair performance evaluation exceed that of the comparison. Example 4 and comparative example 4 are directly comparable. Example 5 and comparative example 5 are directly comparable. In each case, the inventive examples were evaluated more highly.

A comparison of Examples 1 and 2 with Comparative Example 4’ which otherwise are identical but for the nature of the organic acid illustrates the highest evaluation “A” (not less than 70 and up to 100) for the compositions containing lactic acid or malic acid as compared with the lowest evaluation “C” for the composition containing citric acid. (less than 50). A comparison of Examples 1 and 2 with Comparative example 1 having a pH of 5 illustrates the highest evaluation “A” (not less than 70 and up to 100) for the compositions each having a pH of 3.5 compared with the lowest evaluation “C” for the composition having a pH of 5. Thus, by selection of lactic acid or malic acid and setting a pH to 1-4.5, the presence of the amphipathic amide lipid can be realized in terms of enhanced hair conditioning performance. Applicants further note that citric acid is the acid used in example 3 of Hoshino et al.

Thus, through the selection of lactic acid, malic acid or a salt thereof and pH for an amphipathic lipid containing composition, applicants observe an improvement in hair treatment evaluation, which is not suggested in the cited references. Such evidence is offered as evidence of the non-obviousness of the claimed invention.

The rejection of claims 1, 5-6 and 20 under 35 U.S.C. § 103(a) over Hirano U.S. 5,683,685 and Hoshino et al. (U.S. 6,685,953) is respectfully traversed.

None of the cited references discloses or suggests an enhancement in hair conditioning performance for a hair cleansing composition containing lactic acid, malic acid or a salt thereof, at a pH of from 1-4.5.

Hirano et al. has been cited for a disclosure of the claimed composition, in the absence of a disclosure of the claimed amphipathic amide lipid (page 3, lines 16-17 of the outstanding official action).

Hoshino et al. has been cited for a disclosure of an amphipathic amide lipid but fails to disclose the claimed lactic acid, malic acid or a salt thereof or a pH of 1 to 4.5 at 20 x dilution.

Thus, the reference which discloses the amphipathic amide lipid fails to suggest the use of lactic acid, malic acid or a salt thereof or a pH of 1 to 4.5 as claimed and therefore, can not have suggested that such an amphipathic amide lipid would demonstrate enhanced hair conditioning performance when delivered with lactic acid and/or malic acid at a pH of from 1 to 4.5 at 20 x dilution.

The claimed invention was developed based on the discovery that lactic acid, malic acid or a salt thereof at a pH of 1 to 4.5 at 20 x dilution makes possible enhanced permeation into hair which leads to improved smoothness, a moist feeling and physical recovering ratio for hair.

As the cited combination of references fails to suggest an enhancement of amphipathic amide lipid by use of lactic acid, malic acid or a salt thereof at a pH of from 1 to 4.5, the claimed invention is not rendered obvious by the cited combination of references and withdrawal of the rejection under 35 U.S.C. §103(a) is respectfully requested.

Applicants submit that this application is now in condition for allowance and early notification of such action is earnestly solicited.

Respectfully submitted,

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